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Jeffrey L. Sheldon
Attorney at Law
jsheldon@mwe.com
+1 202 756 8082

February 5, 2010

VIA ELECTRONIC FILING

Mr. Nick Sinai
Energy and Environment Director
National Broadband Plan
Federal Communications Commission
445 Twelfth Street, SW
Washington, DC 20554

Ex Parte

Re: A National Broadband Plan for Our Future: Implementation of Smart Grid Technology; GN Docket Nos. 09-47, 09-51, 09-137

Dear Mr. Sinai:

As discussed in a previous *ex parte* notice,[1] representatives of Southern Company ("Southern") recently met with you and your colleagues to discuss the Commission's development of a National Broadband Plan, and specifically in relation to Smart Grid technologies.

During this meeting, Commission staff requested additional information regarding the survival and recovery of utility-owned and operated communications networks (including the wireless network of Southern's wholly-owned subsidiary, SouthernLINC Wireless) and commercial communications networks during and immediately after Hurricane Katrina in 2005. Southern is pleased to provide the Commission with the following information.

1. Interdependencies Between Commercial Telecommunications Networks and Commercial Power Systems Should Be Minimized

As a general matter, Southern respectfully refers Commission staff to the June 12, 2006, Final Report of the Commission's Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks ("Katrina Panel Final Report"),[2] which specifically addresses the performance of various communications networks – including commercial and utility networks – during and immediately after Hurricane Katrina.

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[1] / Southern Company Notice of *Ex Parte* Presentation, filed January 15, 2010, GN Docket Nos. 09-47, 09-51, 09-137.

[2] / The Katrina Panel Final Report is publicly available through the Commission's website at http://www.fcc.gov/pshs/docs/advisory/hkip/karrp.pdf

Although the Katrina Panel Final Report made several recommendations for improving the survivability and reliability of commercial wireless services during and after emergency events such as Hurricane Katrina, these recommendations have yet to be implemented and recent efforts by the Commission to respond to these recommendations, such as mandatory installation of backup electric power, have been vigorously opposed by commercial carriers. Commercial communications networks therefore remain largely dependent on the restoration of commercial electric utility service, and the restoration of electric utility service is dependent on deployment of private utility communications systems that are not dependent on commercial telecommunications networks. Utility ownership and control over the communications systems they use to support utility operations are key to maintaining the levels of service, safety, and reliability needed by the public and required by federal and state regulators, especially during emergency situations such as hurricanes and other natural or man-made disasters.

Experience has shown that interdependence between commercial telecommunications services and commercial electric power should be kept to a minimum. In fact, the National Security Telecommunications Advisory Committee (NSTAC), within the National Communications System, U.S. Department of Homeland Security, states the following:

> The inherent interconnections and resulting interdependencies between domestic communications networks and various other infrastructure sectors pose significant threats not only to our national security, but also to the availability of NS/EP [National Security/Emergency Preparedness] communications services and the operational capabilities of other infrastructures reliant upon communications services.[3]

These concerns about interdependence of commercial telecommunications and commercial electric power were highlighted in the January 2006 Report of NSTAC's Telecommunications and Electric Power Interdependency Task Force (TEPITF), which observed that electric power service providers largely rely on private, internal communications systems for "mission-critical functions, such as process control systems, supervisory control and data acquisition (SCADA) systems, generation facilities, transmission grids, and the distribution network, including emergency response communications."[4] The TEPITF further noted that many communications systems operated by electric utilities are protected from power outages through long-term backup power generation facilities, designed to provide power for up to two weeks without refueling.

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[3] / NSTAC, "Addressing Critical Infrastructure Interdependencies and Independence," http://www.ncs.gov/nstac/nstac_t5.html (last visited Feb. 4, 2010).

[4] / NSTAC TELECOMMUNICATIONS AND ELECTRIC POWER INTERDEPENDENCY TASK FORCE (TEPITF), *People and Processes: Current State of Telecommunications and Electric Power Interdependencies*, January 31, 2006 at 3-1.

"These backup capabilities, which are not economical or feasible for commercial networks, are required by utilities to ensure reliable communications in emergencies."[5]

2. Following Hurricane Katrina, SouthernLINC Wireless Was Able to Restore Service More Quickly Than Commercial Wireless Carriers

SouthernLINC Wireless operates a wireless iDEN network in the Southeast United States, with a service area that includes the Gulf Coast regions of Mississippi and Alabama. Although SouthernLINC Wireless is a provider of commercial wireless services, its primary purpose is to maintain reliable mobile communications services for its electric operating company affiliates in direct support of their electric utility operations. Accordingly, SouthernLINC Wireless' system was designed and constructed from the outset to rigorous utility-grade standards in order to meet the demanding operational requirements of electric utility communications systems.

Hurricane Katrina made landfall on the morning of August 29, 2005, inflicting significant damage throughout the Gulf Coast regions of Louisiana, Mississippi, and Alabama. Within three days (*i.e.*, by September 1, 2005), SouthernLINC Wireless had 98 percent of its cell sites operational, with communications restored at the remaining sites through the placement of portable cell site equipment.[6] USA Today reported on October 10, 2005, that "for the first 72 hours, [SouthernLINC Wireless] radios were virtually the only way to communicate on Mississippi's Gulf Coast."[7] SouthernLINC Wireless even succeeded in increasing its capacity in the affected areas through the addition of over 100 base radios to its network.[8]

By comparison, RCR Wireless News reported the following on September 5, 2005, nearly one week after Hurricane Katrina struck:[9]

- "Cingular Wireless LLC said it has set up free emergency calls at its open company-owned retail stores in Alabama, Mississippi and Louisiana. The carrier also said it plans to deploy mobile calling vans in the area, providing free phone

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[5] / *Id*. at 3-2.

[6] / *See* Dan Meyer, *Carriers Make Slow Progress to Repair Networks*, RCR Wireless News, Sept. 5, 2005; *See also* SPECIAL REPORT OF THE COMMITTEE ON HOMELAND SECURITY AND GOVERNMENTAL AFFAIRS, HURRICANE KATRINA: A NATION STILL UNPREPARED, S. REPT. 109-322 at 289 (2006) (hereinafter "Senate Special Committee Report").

[7] / Dennis Cauchon, *The Little Company that Could*, USA Today, Oct. 10, 2005.

[8] / Remarks of Robert G. Dawson, CEO of SouthernLINC Wireless, before the FCC Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks, January 30, 2006 (hereinafter "Dawson Testimony to the FCC Katrina Panel").

[9] / Dan Meyer, *Carriers Make Slow Progress to Repair Networks*, RCR Wireless News, Sept. 5, 2005.

calls … Cingular added that it has more than 500 generators ready to be dispatched as soon as conditions allow …"

- "Sprint Nextel Corp. said it was sending hundreds of engineers and technicians, as well as nearly two dozen vehicles into the area, but it cannot reach many sites until it is deemed safe … The carrier added that many wireless sites that relied on battery backup have failed and will have to wait until it is safe for generators and personnel to recharge the batteries to turn the sites back on."

- "T-Mobile USA Inc. said more than 80 percent of its coverage was operational in the Mobile, Ala., area and more than 40 percent was operational in the Hattiesburg, Miss., and surrounding Gulf Coast region."

On September 12, 2005, two weeks after Hurricane Katrina struck, RCR Wireless News reported the following:[10]

- "Cingular reported that 75 percent of overall service had been restored in the areas hit by the hurricane as of September 8, with full restoration in many places, including Mobile, Ala.; Jackson and Meridian, Miss.; and Hammond and Houma, La. The carrier added that service has been substantially restored in Hattiesburg, Biloxi and Gulfport, Miss."

- "Verizon Wireless reported similar progress in restoring service in Alabama and the Florida Panhandle, with pockets of limited coverage remaining in Mississippi."

- "Sprint Nextel Corp. said wireless service had been restored in Alabama, more than 80 percent of Mississippi and more than 60 percent in Louisiana."

- "Alltel Corp. said that 90 percent of its wireless network in Mississippi was online as of September 8 …"

- "Nextel Partners Inc. said it had restored more than 85 percent of its wireless services in the area impacted by the hurricane as of September 6."

It was also reported in the Katrina Panel Final Report that the restoration of commercial communications services in the Gulf Coast region was further hampered by the extensive damage and destruction suffered by wireline backhaul facilities, including transport lines, central offices, and switches.[11] SouthernLINC Wireless discovered that it had to work around problems

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[10] / Dan Meyer, *Hurricane's Financial, Physical Impact on Carriers in Limbo*, RCR Wireless News, Sept. 12, 2005.

[11] / *See, e.g.*, Katrina Panel Final Report at 8 – 9 and 14 – 15.

in other carriers' networks. For example, SouthernLINC Wireless became aware that its mobile service customers who had been assigned a 228 area code were unable to receive any calls that were initiated on other carriers' networks; they could only receive calls from other SouthernLINC Wireless customers. To solve this problem, SouthernLINC Wireless issued these customers a second toll-free telephone number, and proactively contacted them to let them know they could receive calls on this additional number.[12]

3. SouthernLINC Wireless' Ability to Restore Service So Promptly Greatly Contributed to Public Safety and Restoration of Public Services

The restoration time for commercial wireless networks in the Gulf Coast region may also be compared to the time needed to restore critical electric utility service in the region. For example, Mississippi Power, an affiliate (and customer) of SouthernLINC Wireless, serves the Mississippi Gulf Coast area. When Hurricane Katrina struck, it inflicted serious damage on Mississippi Power's infrastructure and knocked out electric power to all 195,000 of its customers. More than 600,000 of Alabama Power's customers also lost power. Nevertheless, power was restored to every customer in the service area who could take it by September 10, 2005 – just 12 days after the hurricane hit.[13]

In 2006, the Senate Committee on Homeland Security and Government Affairs issued an extensive report on Hurricane Katrina and the lessons to be learned. As part of its discussion of communications issues arising from Hurricane Katrina, the Report stated:

> Mississippi Power relied on its only viable form of communication – its internal system Southern Linc Wireless. This system was designed with considerable redundancy and proved reliable despite suffering catastrophic damage. Within three days, the system was functioning at nearly 100 percent.[14]

It is clear that Southern's ability to communicate allowed for the efficient establishment of support operations needed for the prompt restoration of electric service. For example, through the use of communications service provided by SouthernLINC Wireless, Mississippi Power was able to establish staging areas and to procure food, shelter, fuel and security, for 1,250 employees of Mississippi Power and another 11,000 workers from 23 states and Canada in a coordinated effort to restore power. The continued availability of communications throughout

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[12] / Dennis Cauchon, *The Little Company that Could*, USA Today, Oct. 10, 2005; *See also* Dawson Testimony to the FCC Katrina Panel.

[13] / Dennis Cauchon, *The Little Company that Could*, USA Today, Oct. 10, 2005; Testimony of David Ratcliffe, President and CEO, Southern Company, before the Senate Committee on Homeland Security and Government Affairs, Nov. 16, 2005.

[14] / Senate Special Committee Report at 289.

this period allowed Mississippi Power to coordinate the tremendous logistics involved in supporting these crews in six tent cities, including the serving of 30,000 meals per day.[15]

Restoration of commercial electric power at the earliest possible time unquestionably promoted the earlier restoration of other essential services, such as hospitals and other medical facilities, the preservation of food supplies, and the operation of public telecommunications networks. There is a direct causal connection between the maintenance of Southern's privately-owned communications network and the restoration of essential public services that save lives and help maintain social order.

In addition, SouthernLINC Wireless was often the only means of communications for thousands of rescue workers. Within days of the storm, SouthernLINC Wireless activated nearly 2,500 new phones for use by the Mississippi National Guard, the U.S. Coast Guard, the Mississippi Emergency Management Agency and other government agencies and public service entities.[16] Moreover, continued operation of the SouthernLINC Wireless system allowed Southern's employees, rescue personnel working in the damaged areas, and SouthernLINC Wireless customers to contact loved ones to exchange information on their personal situations.[17] This, in turn, helped these individuals to refocus on the tasks at hand despite the personal trauma they may have experienced in their own homes and families.

4. SouthernLINC Wireless's Network Was Designed to Utility Standards, Not the Standards of a Commercial Wireless Network

SouthernLINC Wireless cell sites were built with redundant electronic components, and towers were built to withstand winds of 100 miles per hour – even if covered with a half-inch of ice. Generators were installed at almost every tower site to maintain power until commercial electric power service could be restored.[18]

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[15] / Dennis Cauchon, *The Little Company that Could*, USA Today, Oct. 10, 2005; Dawson Testimony to the FCC Katrina Panel.

[16] / Dawson Testimony to the FCC Katrina Panel. The FCC's Katrina Panel also received testimony from Edmund M. Sexton, Sr., the Sheriff of Tuscaloosa, Alabama, and then-President of the National Sheriff's Association, who described losing communications with a Sheriff in Louisiana "due to limited and overwhelmed cellular service." Sheriff Sexton stated that he then had a conversation with a Sheriff in Mississippi who was utilizing SouthernLINC Wireless' system and was thus able to communicate to Sheriff Sexton the immediate need for additional law enforcement personnel.

[17] / *Id*.

[18] / *Id*.

Mobile Radio Technology reported in a February 1, 2007, article on why the SouthernLINC Wireless system performed more reliably:

> SouthernLINC is in the unique position of being owned by Southern Co., the parent company of five electric utilities in the Southeast, all of which also are SouthernLINC customers. As a result, SouthernLINC developed its system with utility-grade standards in mind. It maintains its own backhaul transport, in addition to using microwave links and leased T-1 lines, and has hardened every site within 100 miles of the coast with large reinforced concrete shelters and backup generators that include 50-gallon propane tanks.[19]

The Katrina Panel Final Report noted the following about utilities' private communications networks:

> Electric utility networks (including utility-owned commercial wireless networks) appeared to have a high rate of survivability following Katrina. These communications systems did not have a significant rate of failure because: (1) the systems were designed to remain intact to aid restoration of electric service following a significant storm event; (2) they were built with significant onsite back-up power supplies; (3) last mile connections to tower sites and the backbone transport are typically owned by the utility and have redundant paths (both T1 and fixed microwave); and (4) the staff responsible for the communications network have a focus on continuing maintenance of network elements (for example, exercising standby generators on a routine basis).[20]

A separate industry study confirmed that utility-owned and operated networks performed well during and following Hurricanes Katrina and Rita:

> Most utilities, regardless of service territory size or proximity to the centers of the storms, reported that their communications systems stood up well to the hurricanes. This stands in stark contrast to the public switched network in the region and wireless carriers, who suffered extensive loss of service and slow recovery time. CII systems...are designed to meet the specialized needs of a single entity or group of companies. Such construction would be cost-prohibitive for a commercial system...Thus...there will be a continued need for CII entities to

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[19] / Lynette Luna, *School of Hard Knocks*, Mobile Radio Technology, Feb. 1, 2007.

[20] / Katrina Panel Final Report at 12 – 13.

> maintain their own private communications networks for mission-critical functions, including backbone networks.[21]

Because SouthernLINC Wireless' network is designed to utility-grade standards, over 25% of SouthernLINC Wireless' customers (by mobile units served) are public sector entities such as governmental agencies, public safety agencies, or other utilities not affiliated with Southern Company.[22]

We trust the foregoing is responsive to your inquiry. If we can provide any further information, please let us know.

Pursuant to the Commission's Rules, a copy of this letter is being filed electronically in the dockets referenced above.

Very truly yours,

/s/ Jeffrey L. Sheldon

Jeffrey L. Sheldon

Counsel to Southern Company

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[21] / "Hurricanes of 2005: Performance of Gulf Coast Critical Infrastructure Communications Networks," United Telecom Council (UTC), November 2005.

[22] / Customer data is current as of December 2009.